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Dimensions of adolescent subjective social status within the school community: Description and correlates

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Abstract

School pupils strive to meet both school-defined and social goals, and the structure of adolescent self-concept is multidimensional, including both academic and non-academic self-perceptions. However, subjective social status within the school community has been represented as a single dimension. Scottish 15-year olds participating in a school-based survey (N = 3194) rated their own status, compared to their school year-group, via images of seven 10-rung ladders. These generated a very high response rate, and factor analysis distinguished three dimensions: (1) ladders representing “popular”, “powerful”, “respected”, “attractive or stylish” and “trouble-maker”; (2) “doing well at school” and “[not] a trouble-maker”; and (3) “sporty”. Unique relationships with variables representing more objective and/or self-report behavioural measures suggest these dimensions are markers of “peer”, “scholastic” and “sports” status. These analyses suggest multiple dimensions of adolescent social hierarchy can be very simply measured and contribute towards the development of more robust instruments within this area.

Keywords

Social hierarchy; Subjective social status; Peer status; Scholastic status; Sports status; Adolescence

Introduction

‘Wherever we look, we have hierarchies, people varying in their social status’ (Marmot, 2004, p. 89), and, it has been suggested, attempting to achieve status in one’s social group is both ubiquitous and important in terms of the emotional and resource-based benefits it brings (Anderson, John, Keltner, & Kring, 2001). In this paper, we describe the development of “ladders” to measure a number of dimensions of subjective social status among 15-year old Scottish school pupils, and the relationships between these dimensions and a range of individual characteristics.

Subjective status has been defined as a person’s sense of place within a hierarchy, which may or may not agree with objective status (Adler & Stewart, 2007; Davis, 1956). Our

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measures were adapted from the MacArthur scales of subjective social status, developed in the US and subsequently used in studies of health inequalities among both adults (e.g. Adler, Epel, Castellazzo, & Ickovics, 2000; Operario, Adler, & Williams, 2004; Ostrove, Adler, Kuppermann, & Washington, 2000; Singh-Manoux, Adler, & Marmot, 2003) and adolescents (Goodman et al., 2001; Goodman, Huang, Schafer-Kalkhoff, & Adler, 2007).

We begin by describing the MacArthur scales, note evidence of, and review the literature relating to, multiple dimensions of social status in adolescence, and, finally, discuss the meaning of subjective status measurements. Our own analysis is set against this background.

The MacArthur Scale of Subjective Social Status was developed to "capture individuals' sense of their place in the social ladder which takes into account standing on multiple dimensions of socio-economic status and social position" (Adler & Stewart, 2007). It is a simple visual scale (a picture of a ladder) which asks respondents how they measure up to a particular comparison group. In the most commonly used (adult) version of the MacArthur Scale, respondents are asked to mark where they would place themselves on a ladder "representing where people stand in the United States". The instructions note that at the top are the best off people, with most money, education and respected jobs; at the bottom are the worst off; the ladder thus aims to provide a summative measure of subjective socio-economic status (SES). There is also a second, less used, and less clearly defined, "community" ladder, which asks respondents to define community "in whatever way is most meaningful to you", the highest rung representing those with the "highest standing" in their community.

On the basis that in adolescence, socio-economic status is ascribed by that of the family, the MacArthur scale youth version "society" ladder asks respondents to indicate the point which "best represents where your family would be". Similarly, on the basis that the most salient community is that of the school, the highest rung of the "community" ladder is described as representing "the people in your school with the most respect, the highest grades, and the highest standing" (Goodman et al., 2001).

However, the range of tasks facing school pupils include both school-defined and social goals (Gorman, Kim, & Schimmelbusch, 2002; Wentzel, 1999), suggesting that pupil standing within the school community is likely to be located on more than one dimension. The key school-defined goal is academic attainment, pupils being differentiated formally (streams or sets) or via the results of tests or exams. In addition to this official, academic hierarchy, schools strive to regulate pupil behaviour and encourage particular activities, especially sport, also hierarchically arranged and recognised in the form of teams. However, within the school context, pupils also need to maintain and establish interpersonal relationships, develop social identities and a sense of belongingness. Consistent with this, pilot study feedback from Finnish pupils on the "school community" ladder suggested that "respect" and "highest standing" represented a different dimension from "highest grades" (Karvonen, personal communication, 26.06.08).

Paralleling this, the self-concept literature emphases its multidimensional structure and identifies academic and non-academic self-perceptions in childhood and adolescence (Byrne & Shavelson, 1996; Marsh, Barnes, Cairns, & Tidman, 1984; Song & Hattie, 1985). Thus, Harter's Self-Perception Profile measures were based on the distinction between separate domains of competence (academic, social, sports, appearance and behaviour) and the possibility of varying self-assessments across domains (Harter, 1982, 1985, 1988). Evidence that this multidimensional self-concept structure becomes increasingly differentiated, stable and realistic with age (Byrne & Shavelson, 1996; Cole et al., 2001; Marsh, Trautwein, Ludke, Koller, & Baumert, 2005) is consistent with the suggestion that in mid-adolescence,

highly academic pupils are not necessarily one and the same as respected or high-standing pupils.

A key question relates to the meaning of self-assessments and, specifically, subjective status measurements. While it might be expected that pupils have a reasonably accurate sense of their academic position, this may not extend to other dimensions. The self-concept literature makes a strong case for suggesting that self-perceptions map well onto more objective measures and/or perceptions held by others. Harter found that among American 14–15-year olds, self-perceived cognitive competence was strongly correlated with both teacher-perceived cognitive competence (r = .73) and standardised test achievement (r = .54), while among younger pupils, correlations between self-perceived social competence and an index of friendship nominations and between self-rated physical competence and gym teacher ratings of physical competence were in the region of r = .60 (Harter, 1982). Similarly, in a range of studies, dimensions of self- and teacher-report self-concept were found to be 'substantially' correlated (Marsh et al., 1984), while grade points were found to have a much stronger relationship with academic than other dimensions of self-concept (Song & Hattie, 1985).

Set against this is evidence from studies of adolescent peer relations which suggests self-reports of status should be treated with caution (Mayeux, Sandstrom, & Cillessen, 2008). Within any one status group there may be large variations in self-perceived peer experiences (Crick & Ladd, 1993) and peer-assessed popularity does not necessarily match an adolescent's own sense of their social acceptance (McElhaney, Antonishak, & Allen, 2008). There is evidence that self-reports may be more valid when acknowledging negative rather than positive attributes (Hymel & Franke, 1985); further, certain children may be relatively insensitive to evidence of peer dislike and so unaware of their social status (Zakriski & Coie, 1996). This is further complicated by a consensus that there are distinct types of high status pupils, particularly in respect of popularity. One type, based on liking, tends to be associated with behaviours such as kindness, trustworthiness and sociability. The other, based on social reputation, impact or visibility, has been related to dominance, disruptive or aggressive behaviour (Coie, Dodge, & Coppotelli, 1982; Farmer & Rodkin, 1996; Parkhurst & Hopmeyer, 1998).

Other characteristics linked with adolescent social status include appearance, material possessions, spending power, athletic ability and academic performance, the significance of each differing according to gender (Meisinger, Blake, Lease, Palardy, & Olejnik, 2007). Thus, many studies have demonstrated the importance of appearance (physical attractiveness and sartorial style) for status, particularly among girls (De Bruyn & Cillessen, 2006; Kennedy, 1990). Among American pre-adolescent children, higher parental SES, appearance and grooming behaviour were associated with high social status among girls, while athletic ability was the most important factor for boys (Adler, Kless, & Adler, 1992). Similarly, among American 11–13-year olds, cheerleading and attractiveness were related to social status among females, while achievement on the sports field mattered for males (Eder, 1985; Eder & Kinney, 1995). A study of 13-year old Scottish pupils found the popularity of "top girls" was attributed to their spending power and appearance (mature and street-wise), and although "top boys" were also distinguished by their good looks and brand-label clothes, their main interest was sport (Michell, 1997).

Several studies suggest that while cognitive ability has a positive effect on social status in childhood, the associations are less consistent in adolescence (Juvonen & Murdock, 1995; Lubbers, Van Der Werf, Kuyper, & Offringa, 2006), and, for many adolescent males, academic achievement may be "a potentially degrading stigma" (Adler et al., 1992). Among

Scottish 13-year olds, it was pupils from "middle" rather than "top" groups who were doing well, enjoyed academic subjects, worked hard and had positive aspirations (Michell, 1997).

Against this background, the overarching aims of this study are to describe the structure of adolescent school-based hierarchies and examine their associations with a range of individual characteristics. Our questions are therefore: firstly, how do 15-year old pupils respond to a set of ladders representing different domains of subjective social status within the school community; secondly, how are responses on the ladders inter-related (what is the underlying factor structure); and thirdly, how are the resulting factors associated with a range of variables representing other- and self report objective and behavioural characteristics (SES and spending power; physical appearance; peer relationships including friendship nominations; academic orientation and achievement; sports participation and interest). Given that adolescent peer relationships are shaped by gender (Giordano, 2003), as evidenced by the gendered nature of most of the dimensions reviewed above, we also examine whether there are gender differences in these associations.

Methods

Participants and procedures

Data are drawn from the "***Peers and Levels of Stress"* (*"PaLS"***) Study, conducted among 15-year old pupils within 22 schools situated in and around Glasgow city in the West of Scotland. The study received approval from the relevant Glasgow University Ethics Committee, participating local authorities and schools. The sampling scheme aimed to obtain a representative sample by selecting schools within strata based on geographical location, religious status and deprivation. Subsequent analyses found that participating and non-participating schools did not differ significantly in respect of these dimensions, nor for total pupil roll or exam achievement by the end of statutory schooling (Sweeting, Young, & West, 2008). Within selected schools, all pupils in (Scottish) Secondary 4 (S4), the final statutory school year, were invited to participate via letters sent to parents, including opt-out consent forms.

During school-based sessions, pupils filled in a questionnaire in examination-type conditions, completed a brief interview and had their height and weight measured (West, Sweeting, Young, & Kelly, 2010). The total sample comprised 1572 males and 1622 females (81% of the eligible sample of 3950) who filled in a questionnaire, of whom 3057 were interviewed and measured (the discrepancy accounted for by pupils absent from school on the survey day who posted back their questionnaires).

Measures

Ladders—Ladders relating to domains identified within the self-concept literature ("doing well at school", "popular", "sporty", "attractive and stylish", and "rebellious") and, because of our interest in status, two further areas ("powerful" and, echoing the wording in the original "school community ladder", "respected"), were tested in a pilot study in which 15-year old focus group participants completed the "ladders" on an individual basis. The majority found it an easy task and "a good way to explain yourself". However, some had difficulty indicating how popular they were, since they were unsure of the reference group (their friends or pupils in year group overall). Further, "rebellious" was not well understood. The main study questionnaire therefore included seven pictures of a 10-rung ladder (and one example), with the instructions "Imagine these ladders show where people fit in your year group. Where would you put yourself?" (see Fig. 1). The text for each ladder asked: "How POPULAR are you compared with the rest of your year group? (Not just compared with your own friends.) Top = the most popular people in your year"; "How WELL ARE YOU

DOING AT SCHOOL compared with the rest of your year group? Top = people who get the best grades"; "How POWERFUL are you compared with the rest of your year group? Top = most powerful people – can get others to do what they want, in good or bad ways"; "How much of a TROUBLE-MAKER are you compared with the rest of your year group? Top = people who make the most trouble"; "How ATTRACTIVE OR STYLISH are you compared with the rest of your year group? Top = the most attractive, stylish people"; "How RESPECTED are you compared with the rest of your year group? Top = people who are most respected by others"; "How SPORTY are you compared with the rest of your year group? Top = most sporty people". The rungs were scored 1–10.

Socio-economic status—Given strong associations between socio-economic status and both academic achievement (UK National Equality Panel et al., 2010) and behavioural disorders (Meltzer, Gatward, Goodman, & Ford, 2000), together with suggestions that popularity, especially that of females, is linked with parental SES, particularly visible wealth (Adler et al., 1992), our analysis included two measures of family SES. These were firstly, social class, an individual (household) measure reflecting both resources and culture (Bourdieu, 1984; Carr-Hill, 1990); secondly, family affluence, based on measures of household material resources on which pupils can report accurately (Currie et al., 2008) and thus, potentially, representing the most visible aspect of SES for adolescents. ***Social class*** was defined on the basis of the occupation of the head of the household, derived via pupil interview. Valid responses were available for 85.9% of the sample; those missing had no parent in work, were not living with parental figures, provided insufficient detail or were not interviewed. Social class was coded using the UK Standard Occupational Classification (SOC; Office of Population Census and Surveys, 1990) and collapsed into three categories: non-manual (comprising Class I, professional; Class II, managerial and technical; and Class IIINM, skilled non-manual occupations, $n = 1663$); skilled manual (Class IIIM, $n = 670$); and semi or unskilled manual (Classes IV and V, $n = 412$). ***Family affluence*** (Currie et al., 2008) was derived via items in respect of: number of family cars, vans or trucks; having own (not shared) bedroom; number of family computers; and number of family holidays in the past year. It was collapsed into low (scale scores 0–3, $n = 496$), mid (4–5, $n = 1280$) and high (6–7, $n = 1309$) categories. Although the two measures are related, the correlation (before collapsing) was only moderate ($r = -.325$).

Pocket money—Pupils were asked how much pocket money they received each week. This variable was collapsed into four categories, with mean values £0.36 ($n = 647$), £5.38 ($n = 577$), £10.08 ($n = 1089$) and £21.86 ($n = 783$).

Appearance-related variables—Following a brief interview, height and weight measurements were taken in indoor clothes with no footwear. ***Body Mass Index*** (kg/m^2) was categorised as "underweight" ($n = 200$), "normal" ($n = 2132$), "overweight" ($n = 518$) and "obese" ($n = 169$) based on standard (International Obesity Task Force) definitions for children and adolescents (Cole, Bellizzi, Flegal, & Dietz, 2000; Cole, Flegal, Nicholls, & Jackson, 2007). After the interview and physical measures, interviewers completed two ratings on each pupil. The first was ***physical maturity*** for age and sex, with "below average" ($n = 346$), "about average" ($n = 2036$) and "above average" ($n = 638$) options. The second was ***physical attractiveness*** using a 5-point scale anchored with "average" in the middle, "very good" at one pole and "very poor" at the other. Responses, which were skewed towards the positive pole, were collapsed into "(very) good" ($n = 1252$), "average" ($n = 1474$) and "(very) poor" ($n = 294$). Interviewers were instructed to make their assessments quickly, akin to first impressions. The psychological literature on the impact of physical attractiveness on outcomes such as expectations about children's academic abilities (Clifford & Walster, 1973) or decisions about hiring or promotion (Collins & Zebrowitz,

1995) was incorporated into interviewer training, in order to reduce unease about this particular rating. The survey process provided the opportunity to observe large numbers of S4 pupils against which interviewers could form their judgements and it is possible that these may have altered over the course of fieldwork. Since the pupil interviews and physical measures were conducted on a one-to-one basis, it was not possible to assess inter-rater reliability. However relationships between three independent ratings of approximately 900 15-year olds using a similar (but 7-point) scale were each in the region of Spearman's rho = .3 (Macintyre & West, 1991).

Peer-related variables—Friendship data were collected by asking pupils to name up to six friends. The resulting ***nominations received*** variable was collapsed into none (n = 223), one (n = 349), two or three (n = 1009), four or five (n = 894) and six or more (n = 719). In order to determine ***group size***, friendship data were imported into the social network Ucinet 6 and Netdraw software packages (Borgatti, Everett, & Freeman, 2002). Relationships were symmetrised (so only including reciprocated links) and the Girvan–Newman clustering algorithm (Girvan & Newman, 2002) applied to each school network. To ensure consistency across school networks, the sociogram/network partition with the highest Q statistic was selected. Finally, each school sociogram was inspected manually in conjunction with each participant's description of their own friendship group, and any (relatively rare) obvious misclassifications corrected. Group size was collapsed into isolated pupils (no reciprocated links, n = 449), dyad (n = 156), three to five members (n = 527), six to eleven (n = 1231) and twelve or more (n = 831). Since our study was based on data obtained from single school year groups, we recognise that 'isolates' may have had friends outside the S4 year group, or within the year group who did not complete the questionnaire. However, for simplicity, and in line with others (Ennett & Bauman, 1993) we use the term isolates. The correlation between nominations received and group size (before collapsing) was r = .445. For example, only half the isolates received no nominations, the remainder receiving but not reciprocating. The questionnaire asked pupils "do you have a ***group or gang*** that you hang out with at school?", with yes (n = 2549) or no (n = 603) response options. It also included a series of eight items, originally reported in studies of bullying in schools (O'Moore, Kirkham, & Smith, 1997; Whitney & Smith, 1993) (e.g. "I've been physically hurt, e.g. hit and kicked", "No-one would talk to me"), scored on a 4-point scale ("never" = 1 to "most days" = 4) in respect of the current school year. These were used to categorise pupils as having been ***victimised*** in any way weekly or more (n = 398), less often (n = 1492) or never (n = 1258).

Academic-related variables—Questionnaire items about school included "if I get the chance to ***skip school***, I do", scored "strongly disagree" (n = 1067), "disagree" (n = 1392), "agree" (n = 534) and "strongly agree" (n = 160). Scottish pupils take Standard grade exams at the end of statutory education, and can be entered at different grade levels, credit being the highest. Number of ***credit-level standard grades entered for***, collapsed into none (n = 648), between one and four (n = 1095), five or six (n = 601) and seven or eight (n = 647) was used as a proxy for academic achievement. Pupils were also asked about their ***plans on leaving school***, responses collapsed into tertiary education (higher and further, n = 2372) and apprenticeship, training or work (n = 649).

Sport-related variables—Pupils were asked how frequently they engaged in a range of leisure activities including "***exercise or do sports***" and "go to ***watch sports*** matches", each coded never (n = 281 for playing and n = 1179 for watching), weekly or less (n = 1534 and n = 1660) and daily or most days (n = 1329 and n = 310).

Analyses

Gender differences in ladder scores were determined via the F-statistic, associations between the ladders via Pearson's correlations and gender differences in these correlations via the web-based VassarStats program for the significance of the difference between two correlation coefficients (http://faculty.vassar.edu/lowry/rdiff.html). Data reduction in respect of the seven ladder scores used principal components analysis with varimax rotation. Since almost identical results were obtained for males and females (detailed results available from HS), analysis was conducted on the whole sample. Results (scree plot and variance analysis) suggested a three factor solution was optimum, accounting for 77% of the variance.

Associations between the factor scores and a range of variables, adjusted for gender, were determined via the SPSS procedure GLM (results shown as estimated marginal means with F, significance and partial eta-squared to show effect sizes). Continuous measures were categorised to identify any non-linear relationships. Analyses were conducted separately in respect of each variable (i.e. entering social class and gender in respect of each factor score, then family affluence score and gender, etc). In additional analyses, GLM was used to identify gender differences in these relationships via significant interactions between gender and each independent variable.

Given a sample size of 1000, a correlation as low as .081 is significant at the .01 level (Rohlf & Sokal, 1969). Our total sample was approximately 3000, equally split between males and females; in addition, we report a large number of analyses. We therefore focus on correlations over .100, rather than relying on significance levels, and, in other analyses, on significance levels of $p < .01$.

Finally, since very similar results were obtained in analyses based on data with and without weights constructed to compensate for non-response (Sweeting et al., 2008), results based on unweighted data are shown here.

Results

Responses ranged from 1 to 10 on every ladder, with very little missing data; "how sporty are you" was the ladder with the highest response (99.1%), "how popular are you" the lowest (98.2%). Table 1 shows the mean (and SD) scores on each ladder. In general, means ranged from 5.0 to 7.0, but were lower for "trouble-maker". Males rated themselves significantly higher on each ladder, the greatest gender difference occurring for "sporty" and the smallest for "doing well at school".

Correlations between the ladder scores are shown in Table 2. All were positive, apart from that between "doing well at school" and "trouble-maker". The strongest relationships occurred between "popular", "attractive or stylish" and "respected", the weakest between "doing well at school" and "popular", "attractive or stylish", "respected" and "sporty", and between "sporty" and "trouble-maker".

Despite no clear gender differences in the pattern of relationships, correlations were significantly higher among males for "sporty" with "popular" (p for 2-tailed test of difference between correlations <.001), "powerful" ($p = .009$), "attractive or stylish" ($p < .001$) and "respected" ($p < .001$), and for "respected" with "popular" ($p < .001$). Correlations were significantly higher among females for "doing well at school" with "sporty" ($p = .004$) and for "powerful" with "trouble-maker" ($p = .006$).

Table 3 shows the factor structure of the ladder scores. The first factor, explaining half the total variance, included "popular", "powerful", "respected" and "attractive or stylish", each loading over .800, and "trouble-maker", loading .505. We have titled this factor "peer

status". The item loading most strongly on the second factor, which explained almost one-fifth of the total variance, was "doing well at school"; "trouble-maker" had a negative loading (−.672); this factor is titled "scholastic status". Finally, the third factor, titled "sports status", and explaining one-tenth of the total variance, was represented by the single item "sporty"; loadings of all other items were below .300.

Analyses of variance showed higher scores (all $p < .001$) for males on the "peer" ($F = 82.1$) and "sports" ($F = 362.0$) factors, and for females on the "scholastic" factor ($F = 13.2$), the latter reflecting the much lower scores of females on the "trouble-maker" ladder, which had a negative loading on the "scholastic" factor.

Having determined the underlying factor structure of our ladder measures, the next step was to establish the correlates of these dimensions. Table 4 therefore shows associations between each factor and indicators of SES and spending power (estimated marginal means after adjusting for gender, *F*, significance and effect size). Social class was related only to "scholastic", with higher scores among pupils from higher class backgrounds. However, family affluence was positively related to each factor, and most strongly to "peer". Pocket money also had a strong positive relationship with "peer", the significant interaction with gender indicating a stronger relationship for females ($F = 35.4$) than males ($F = 14.0$). The opposite pattern was seen between pocket money and "scholastic" where those with the least spending power had the highest scores.

As shown in Table 5, interviewer-rated attractiveness and physical maturity ratings were positively related to "peer", attractiveness also being positively, although much more weakly, associated with "scholastic" and "sports". There was a gender difference in the relationship between body mass and "peer". Among males, "peer" scores were significantly lower among the "underweight" than the "normal and "overweight" groups. In contrast, among females, the "obese" had the lowest and "normal" groups the highest "peer" scores. "Obese" males and females had the lowest "sports" scores.

As Table 6 shows, there was a strong positive linear relationship between number of friendship nominations received and "peer", suggesting that this dimension was associated with an objective measure of others' liking. Relationships between nominations and "scholastic" and "sports" were also positive, but considerably weaker. In respect of group size, isolate status pupils had the lowest, and pupils in large groups the highest scores on each factor, the strongest relationship occurring with "scholastic". "Peer" scores were higher among those who reported having a group or gang at school, and higher scores on all three factors were associated with less frequent victimisation.

Each academic-related variable (school skipping, credit-level entries and post-school plans) was very strongly associated with "scholastic", relationships with the other two factors being weaker or non-existent. School skipping was positively related to "peer" and negatively to "scholastic" and "sports", while number of exam entries was positively associated with "scholastic" only. The significant gender interaction between exam entries and "scholastic" occurred because the pattern for males was stronger and more clearly linear than that for females. Planning tertiary education was positively associated with "scholastic" and (weakly) inversely associated with both "peer" and "sports".

There were a number of gender interactions in respect of associations between playing and watching sport and the three factors. Thus, exercising or playing sports was positively associated with "peer" only among males, with "scholastic" only among females, but with "sports" regardless of gender. Watching sports matches was associated with "peer" (positively) and "scholastic" (negatively) among males only, and the positive relationship between sports watching and "sports" was much stronger for males.

Finally, examination of Tables 4–6 shows the largest effect sizes for "peer" occurred in respect of pocket money (partial eta-squared.045), friendship nominations (.027) and attractiveness rating (.020). As comparison, effect sizes for gender (not shown) in these three analyses were all in the region of .030. For "scholastic" the largest effect sizes were school skipping (.185), exam entries (.148) and post-school plans (.097) (effect sizes for gender all below .005), while for sport they were sports playing (.259), watching (.101) and body mass category (.032); effect sizes for gender around .030 for analyses including playing or watching, .107 for the analysis including body mass category.

Discussion

This paper has shown that it is possible to identify different dimensions in respect of pupils' subjective social status within the school community via a simple set of items which are understood by adolescents and which generate a very high response rate. The distinction between ladders representing popularity, power, receipt of respect, attractiveness or style and trouble-making, and those of academic achievement and conforming to behavioural standards, confirms that "respect" and "highest standing" represent a different dimension from "highest grades" (Karvonen, personal communication, 26.06.08). The particular relationships with variables representing more objective measures suggest the dimensions identified are a reflection of "peer", "scholastic" and "sports" status.

Our factor analysis was exploratory rather than confirmatory; the ladders were intended to represent domains which the literature suggests may be separate (Harter, 1982; Marsh et al., 1984). The dominant factor ("peer") included "popular", "powerful", "respected", "attractive or stylish" and, although weighting less strongly, "trouble-maker". In many respects it might appear to more clearly represent status based on social reputation, impact or visibility rather than liking (Coie et al., 1982; Farmer & Rodkin, 1996; Parkhurst & Hopmeyer, 1998). Pupils scoring high on this factor came from families with the most material resources and received the most pocket money, were rated more physically attractive and mature, were more likely to be in the largest friendship groups, to report belonging to a group or gang, to have no experience of victimisation and to say they would skip school. But in addition, there was a clear linear relationship between scores on this factor and friendship nominations, a strong indication that those high on self-report "peer status" were also liked by others. The alternative explanation, that others wanted to be friends with them, is less likely given the question wording ("think about all your friends … fill out a page for each one"). This suggests that our "peer status" factor may represent an amalgam of the two types of popular pupils (liked and visible) which other studies have found to overlap (Cillessen & Rose, 2005). It is possible that inclusion of additional ladders representing characteristics such as kindness or trustworthiness which other studies have shown to be more clearly associated with likeability, might have resulted in the identification of separate "peer liking" and "peer impact" factors.

The second factor ("scholastic") contrasted with the other two in respect of its very strong relationships with indicators of academic orientation and achievement. The relative effect sizes suggest that of the three dimensions, self-report "scholastic" assessments relate most strongly to more objective measures, as might be expected given the significance and visibility of position in the academic hierarchy within the school system. This factor was also the only one to be associated with social class, reflecting the importance of links between academic engagement and cultural, over and above material, measures of SES (Reay, 2006). Contrasting with "peer", "scholastic" was negatively associated with pocket money, corresponding with another study which found adolescents from higher SES backgrounds and those with less spending money were less likely to own consumer goods such as electrical items, but *more* likely to own books (West, Sweeting, Young, & Robins,

2006). “Scholastic” was positively related to friendship nominations, and, more clearly than the “peer” factor, to group size, but not with self-report ‘group or gang’ membership, suggesting rather different types of friendship among “scholastic” pupils compared with those high on “peer”. “Scholastic” pupils may well be similar to those called “middle groups” by participants in another Scottish study; academically engaged and “the kind of adolescents most adults would typically find pleasant and easy to get on with” (Michell, 1997, p. 8).

The final factor (“sports”) was very strongly weighted towards sport, and correlated with fewer variables than the other two. As an indication of its correspondence with objective measures, normal weight pupils had the highest scores on this factor, and obese pupils the lowest. Like the other factors, “sports status” was negatively related to victimisation, highlighting the general low status of bullied pupils.

Gender differences evident in both the completion of the individual ladders and the correlates of the resulting three factors were consistent with literature showing the importance of athletic skills for male popularity and that academic ability is less likely to be a stigma for adolescent females (Adler et al., 1992; Lease, Kennedy, & Axelrod, 2002; Meisinger et al., 2007). Interestingly, pocket money was linked more strongly with the “peer” factor among females, in line with suggestions of the greater importance of material factors for female than male popularity (Adler et al., 1992; Meisinger et al., 2007; Michell, 1997). There was also a gender difference in the relationship between body mass and “peer” status, underweight males and obese females having the lowest scores. This “double standard” was also seen in a study which found that while overweight was negatively associated with others’ ratings of attractiveness in 13–18-year old females, the same did not hold for males (Rosenblum & Lewis, 1999). Overall, however, relationships showed more gender similarities than differences, as evidenced by the almost identical results obtained when separate factor analyses were conducted for males and females.

The correspondence between subjective and indicators of objective status is not exact. For example, males rated themselves higher on every ladder, including “doing well at school” and “attractive and stylish”, despite that fact that females were entered for significantly more credit-level standard grade exams and were more likely to receive “(very) good” physical attractiveness ratings. However, the pattern of associations which each of the three factors identified in our analyses had with a range of characteristics previously demonstrated to relate to distinct and meaningful features of adolescent social status suggests these dimensions map well onto more objective measures. An additional perspective is taken by those who point towards reciprocal and interpretivist models, citing evidence that academic self-concept affects subsequent academic interest and achievement (Marsh et al., 2005), that expecting to be liked by others is a strong predictor of success with peers (Bellmore & Cillessen, 2003) and that correctly perceiving oneself as popular predicts increased levels of aggression in adolescents (Mayeux & Cillessen, 2008).

The existence of different dimensions in pupils’ subjective social status suggests that studies using multidimensional status measures might find each to be differentially associated with other constructs. In this same study, we have found that “peer”, “scholastic” and “sports” status are related to the “stress” hormone, cortisol, in different ways (West et al., 2010). Effects may also vary (interact) with other measures of social position, including gender and SES. One study, for example, suggested that depressive problems in adolescent males were associated with poor sports performance, but in females with not being liked (Oldehinkel, Rosmalen, Veenstra, Dijkstra, & Ormal, 2007). Between-school differences are also a possibility, depending on the emphasis each places on academic achievement compared with other factors such as pastoral care. Thus, “scholastic status” might be more positively related

to attributes such as leadership, and perhaps also associated with pupil well-being in schools which place a stronger emphasis on academic achievement.

Several study limitations must be acknowledged. First is that while the ladders in our questionnaire largely represented domains identified in the self-concept literature, it is possible, as noted above, that had we included additional characteristics, alternative factors might have emerged. Second is that the examination of the associations between the three dimensions and a range of other characteristics included variables which were by no means perfect. They did not include academic achievement in the form of test results or teacher ratings, nor the ratings of teachers or others of behaviour; they relied on single measures; we were unable to assess the reliability of the two interviewer ratings; and the fact that the majority of variables were self-report introduces the problem of shared method variance. Thus sociometric group size depends on reciprocated nominations; perhaps “scholastic” pupils appeared to have larger friendship groups simply because they wrote the names of more friends. Pupils within the same friendship network might have answered the ‘group or gang’ question differently depending on their self-perceived “peer” or “scholastic” status. However, other-report variables were included and most self-report variables were ‘objective’ (e.g. social class, based on parental occupation) or behavioural, rather than relating to personality or character. A third limitation is that partial effect sizes within the GLM analyses were small, however those for variables most strongly related to each of the three status factors were generally larger than those in respect of gender.

The original MacArthur adolescent “society” and “school community” scales have produced interesting findings (Goodman et al., 2003, 2001, 2007). The elaboration of multiple dimensions of social hierarchy among young people, and demonstration that they correspond with more objective and/or behavioural measures, represents a first step towards the development of more robust instruments within this area.

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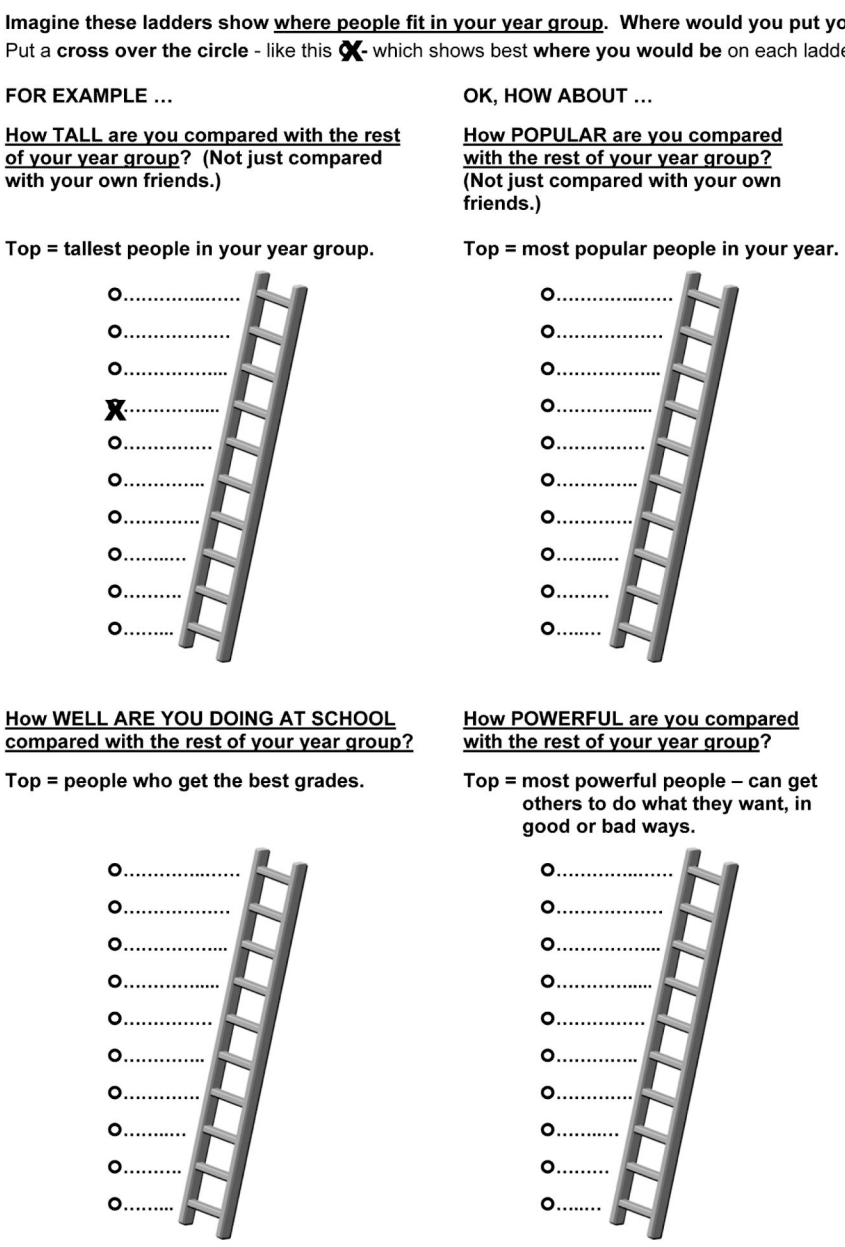

Fig. 1.

"Example", "popular", "doing well at school" and "powerful" ladders as depicted in the pupil questionnaire.

Table 1

Mean (and SD) ladder scores – males and females, and gender difference.

	Malesmean (SD)	**Femalesmean (SD)**	***F* (sig)**
Popular	6.7 (1.7)	6.1 (1.9)	73.5 (.000)
Doing well at school	6.8 (1.9)	6.6 (1.9)	8.3 (.004)
Powerful	6.2 (2.0)	5.3 (2.0)	141.7 (.000)
Trouble-maker	4.1 (2.4)	3.1 (2.3)	138.6 (.000)
Attractive or stylish	6.1 (2.2)	5.4 (2.3)	96.9 (.000)
Respected	6.8 (1.9)	6.1 (2.0)	121.0 (.000)
Sporty	7.0 (2.6)	4.9 (2.7)	517.4 (.000)

Table 2

Correlations between ladder scores – males (above diagonal) and females (below diagonal).

	Popular	Doing well at school	Powerful	Trouble-maker	Attractive or stylish	Respected	Sporty
Popular		.100	.598	.328	.641	.718	.487
Doing well at school	.131		.204	−.242	.115	.174	.068
Powerful	.613	.225		.303	.537	.631	.367
Trouble-maker	.360	−.225	.389		.320	.286	.192
Attractive or stylish	.639	.192	.553	.332		.694	.470
Respected	.642	.215	.606	.284	.668		.495
Sporty	.290	.169	.284	.140	.282	.382	

Table 3

Factor analysis (varimax) of ladder scores – variance explained and rotated component matrix.

	Factor 1	Factor 2	Factor 3
	Peer status	**Scholastic status**	**Sports status**
(Variance explained)	*(49.7%)*	*(17.3%)*	*(10.1%)*
Popular	.829	−.053	.186
Powerful	.828	.035	.099
Respected	.820	.060	.291
Attractive or stylish	.810	−.009	.205
Doing well at school	.261	.869	.018
Trouble-maker	.505	−.672	.032
Sporty	.291	−.004	.948

Table 4

Associations between “peer”, “scholastic” and “sport” factors and indicators of socio-economic status and spending power (adjusted for gender).

	Peer status			**Scholastic status**			**Sports status**		
	Estimated marginal mean	***F* (sig)**	**Partial eta-squared**	**Estimated marginal mean**	***F* (sig)**	**Partial eta-squared**	**Estimated marginal mean**	***F* (sig)**	**Partial eta-squared**
Social class									
Non-manual	.017			.136			.024		
Skilled manual	.041			−.081			.033		
Semi or unskilled manual	.006	0.2 (.822)	.000	−.167	21.7 (.000)	.016	−.010	0.3 (.753)	.000
Family affluence category									
Low	−.175			−.148			−.090		
Mid	−.048			−.027			−.012		
High	.099	15.6 (.000)	.010	.116	14.4 (.000)	.010	.056	4.5 (.012)	.003
Pocket money quartiles									
Lowest (mean = £0.36)	−.208			.125			−.039		
Second (mean = £5.38)	−.206			.232			−.010		
Third (mean = £10.08)	.005			−.032			.047		
Highest (mean = £21.86)	.323	46.8 (.000)*	.045	−.177	22.3 (.000)	.022	−.015	1.3 (.273)	.001

* = Interaction with gender significant $p < .01$.

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Table 5

Associations between “peer”, “scholastic” and “sport” factors and indicators of appearance (adjusted for gender).

	Peer status			Scholastic status			Sports status		
	Estimated marginal mean	***F* (sig)**	**Partial eta-squared**	**Estimated marginal mean**	***F* (sig)**	**Partial eta-squared**	**Estimated marginal mean**	***F* (sig)**	**Partial eta-squared**
Interviewer physical attractiveness rating									
(Very) good	.151			.070			.042		
Average	−.067			−.023			.022		
(Very) poor	−.284	29.4 (.000)	.020	−.113	5.1 (.006)	.003	−.177	6.2 (.002)	.004
Interviewer physical maturity rating									
Below average	−.283			−.013			−.007		
About average	.022			.003			.023		
Above average	.093	17.0 (.000)	.011	.031	0.3 (.772)	.000	−.016	0.5 (.625)	.000
Body mass categories (IOTF)									
Underweight	−.200			.041			.008		
Normal	.051			.028			.109		
Overweight	−.056			−.076			−.227		
Obese	−.218	7.8 (.000)*	.008	.039	1.6 (.193)	.002	−.457	32.3 (.000)	.032

* = Interaction with gender significant $p < .01$.

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Table 6

Associations between “peer”, “scholastic” and “sport” factors and indicators of peer relationships, academic attitudes and achievement and sporting activity and interests (adjusted for gender).

	Peer status			Scholastic status			Sports status		
	Estimated marginal mean	***F* (sig)**	**Partial eta-squared**	**Estimated marginal mean**	***F* (sig)**	**Partial eta-squared**	**Estimated marginal mean**	***F* (sig)**	**Partial eta-squared**
Friendship nominations received									
None	−.305			−.223			−.208		
1	−.223			−.150			−.017		
2–3	−.086			−.052			−.005		
4–5	.098			.038			−.006		
6 or more	.203	21.0 (.000)	.027	.160	10.0 (.000)	.013	.101	4.5 (.001)	.006
Sociometric group size									
Isolate	−.184			−.247			−.115		
Dyad	−.164			−.197			−.011		
3–5	−.028			−.128			.029		
6–11	.048			.051			−.007		
12 or more	.080	6.7 (.000)	.009	.167	16.4 (.000)	.021	.069	2.7 (.029)	.003
Have a group or gang at school									
Yes	.058			−.007			.027		
No	−.209	34.8 (.000)	.011	.044	1.3 (.262)	.000	−.095	7.9 (.005)	.003
Victimisation									
Never	.059			.076			.101		
Less	.019			−.001			−.030		
Weekly or more	−.236	13.7 (.000)	.009	−.211	12.3 (.000)	.008	−.165	13.7 (.000)	.009
Skip school if get the chance									
Strongly disagree	−.138			.488			.108		

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	Peer status			Scholastic status			Sports status		
	Estimated marginal mean	***F* (sig)**	**Partial eta-squared**	**Estimated marginal mean**	***F* (sig)**	**Partial eta-squared**	**Estimated marginal mean**	***F* (sig)**	**Partial eta-squared**
Disagree	−.007			−.036			−.019		
Agree	.206			−.526			−.096		
Strongly agree	.267	18.2 (.000)	.018	−1.050	230.6 (.000)	.185	−.181	8.4 (.000)	.008
Credit-level standard grade entries									
One None	−.035			−.270			.027		
1–4	−.002			−.272			−.012		
5–6	−.022			.319			−.003		
7–8	.065	1.3 (.275)	.001	.614	168.3 (.000)*	.148	.008	0.2 (.874)	.000
Plans for after school									
Education (HE or FE)	−.032			.198			−.027		
Training or work	.100	8.1 (.005)	.003	−.596	314.2 (.000)	.097	.090	6.9 (.009)	.002
Spare time exercise or sports									
Never	.033			−.418			−.979		
Weekly or less	−.024			.026			−.306		
Daily or most days	.022	0.9 (.415)*	.001	.075	27.3 (.000)*	.018	.557	531.9 (.000)	.259
Spare time watch sports matches									
Never	−.083			.046			−.400		
Weekly or less	.036			.026			.181		
Daily or most days	.131	6.4 (.002)*	.004	−.239	9.6 (.000)	.006	.570	170.8 (.000)*	.101

* = Interaction with gender significant $p < .01$.

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